



PATENT APPLICATION

Attorney Docket No. 51288

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7/29/91

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Dieter ELSÄSSER et al. )  
Serial No.: 07/653,100 )  
Filed: February 8, 1991 )  
For: DISK STORAGE DRIVE )  
Group Art Unit: )  
Examiner: )

I hereby certify that this paper is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on this date.

6/7/91  
Date

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PRELIMINARY AMENDMENT

Hon. Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

Prior to the examination of the above-identified application, please amend the claims as follows:

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Claim 1. (once amended) A disk memory drive comprising: a brushless drive motor having an internal space defined therein and a stator including winding means defining magnetically active parts of the drive motor and having a given axial extension, the motor having an outer rotor with an inner circumference, an outer circumference and an open end coaxially encircling the stator and a substantially cylindrical air gap defined between the stator and the rotor, the rotor including a separate non ferromagnetic hub and a soft iron ring element interiorly of said hub and radially [including permanent magnet] located means forming a permanent magnet interiorly of said ring having a predetermined axial extension fixedly connected therewith for magnetic interaction

with said winding means; a disk mounting section provided on the outside of said hub for accommodating at least one storage disk for locat[ed]ion in a clean chamber surrounding said rotor when the drive motor is mounted for operation, the disk mounting section on the hub along its axial length being adapted to extend through a central aperture of the storage disk, the winding means and the magnet means interacting therewith being disposed for at least half of the axial extension thereof within a space surrounded by the disk mounting section of the hub; and [upper and lower] first and second axially separated bearing means having inner and outer races on a stationary shaft rotatably mounting the rotor and the hub on the shaft, the [r]motor also including rotati[onal]ng [position indicator] means interacting with stationary [rotational position sensor] means for determining the rotational position of the rotor, the internal space of said motor, which includes the internal portions thereof with the bearing means, being sealed off against the clean chamber when the drive motor is mounted for operation [containing the disk], [and] a disk-shaped ring member being located with precision at the open end of the rotor between the inner circumference of the rotor and the outer race of [the lower] one of the axially separated bearing means, and means stationary/containing leads establishing electrical connection between the internal space and the outside of the motor.

Claim 12. (once amended) A disk memory drive having [having] a brushless drive motor, comprising a stator having a predetermined axial extension, a coaxially positioned outer rotor [and] encircling the stator and defining therebetween a substantially cylindrical air gap, the rotor having an inner circumference and an outer circumference and a predetermined axial extension, a cylindrically shaped permanent [motor] magnet having a predetermined axial extension disposed adjacent the air gap on the inner circumference of the rotor to rotate therewith and magnetically interact with the stator, a ferromagnetic hub on the outer circumference of the rotor

firmly fixed to the motor magnet, the hub radially surrounding the predetermined axial extension of said permanent magnet and being provided on its outer circumference with a disk mounting section which can extend[s] through the central opening in a storage disk to mount [the disk and allowing] at least one storage disk [to be accommodated] thereon, [a clean chamber surrounding the disk mounting section to contain the mounted disk therein, at least half of the axial extension of both the stator winding and of the motor magnet interacting therewith being positioned within the space encompassed by the disk mounting section of the hub,] a stationary shaft having [upper and lower] first and second axially separated bearing means mounted thereon [for] rotatably mounting the rotor with hub on the shaft, and seals located axially [above the upper and below the lower] outside of the axial extension of the first and second bearing[s] means for sealing the space therebetween [from the outer clean chamber].

#### R E M A R K S

The claims as filed are those required to be filed under 37 CFR §1.60. This amends the independent claims to those to be examined in this application.

Respectfully submitted,

FITCH, EVEN, TABIN & FLANNERY

By

  
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June 7, 1991

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